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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/473,296	12/28/1999	HIROAKI SHISHIDO	501.38036X00	9810

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EXAMINER

HANNAHER, CONSTANTINE

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/473,296

Applicant(s)

SHISHIDO ET AL.

Examiner

Constantine Hannaher

Art Unit

2878

-- Th MAILING DATE of this communication appears on the cover sheet with the c rrespondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-9 and 16-23 is/are allowed.
- 6) ☒ Claim(s) 1,3,10,11,13-15 and 24-28 is/are rejected.
- 7) ☒ Claim(s) 2,4 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

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Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 20 July 2000 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

2. The disclosure is objected to because of the following informalities: on page 21, "filed of view" is used when "field of view" is meant.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made

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in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 3, 10, 11, 13-15, and 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karpol *et al.* (US006369888B1).

With respect to independent claim 1, Karpol *et al.* discloses an apparatus (Fig. 1A) for article inspection comprising a laser source 4 for emitting an ultraviolet laser beam, coherence reducing means 30, objective lens means 10, image detecting means 20, storage means 34, and defect detecting means 32. The apparatus of Karpol *et al.* is equipment for detecting pattern defects as is apparent from the discussion at column 1, lines 38-44. Although the reference is silent as to the specific operation of elements 34 and 32, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the "reference file" stored in element 34 was an image signal which processor 32 would compare to the image signal from image detecting means 20 as the most straightforward process to detect any extra or missing chrome.

With respect to dependent claim 3, Karpol *et al.* discloses the recited structure (Fig. 3).

With respect to independent claim 10, Karpol *et al.* discloses an apparatus (Fig. 1A) for article inspection comprising a laser source 4 for emitting an ultraviolet laser beam, coherence reducing means 30, irradiating means 10, image detecting means 20, and defect detecting means 32. The apparatus of Karpol *et al.* is equipment for detecting pattern defects as is apparent from the discussion at column 1, lines 38-44. Although the reference is silent as to the specific operation of element 32, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the processor 32 would use information concerning the image signal from image detecting means 20 in view of the connection therebetween to detect any extra or missing chrome.

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With respect to dependent claim 11, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the coherence reducing means **30** in the apparatus of Karpol *et al.* reduced at least the temporal coherence of the beam from laser source **4** since this is a typical effect of the embodiments disclosed by the reference.

With respect to independent claim 13, Karpol *et al.* discloses a method corresponding to the illustrated apparatus (Fig. **1A**) for article inspection which would comprise the steps of emitting an ultraviolet laser beam from laser source **4**, irradiating a sample **1** with the beam through coherence reducing means **30** and an objective lens **10**, detecting an image of the sample **1** through the objective lens **10**, and obtaining an image signal of the image of the sample **1** with image detecting means **20**. The method of Karpol *et al.* is for detecting pattern defects as is apparent from the discussion at column 1, lines 38-44. Although the reference is silent as to the specific operation of elements **34** and **32**, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the "reference file" stored in element **34** serving as a storage means was an image signal which processor **32** would compare to the image signal from image detecting means **20** as the most straightforward process to detect any extra or missing chrome.

With respect to dependent claim 14, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the coherence reducing means **30** used in the method of Karpol *et al.* reduced at least the spatial coherence of the beam from laser source **4** since this is a typical effect of the embodiments disclosed by the reference.

With respect to dependent claim 15, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the coherence reducing means **30** used in the method of Karpol *et al.* reduced at least the temporal coherence of the beam from laser source **4** since this is a typical effect of the embodiments disclosed by the reference.

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With respect to independent claim 24, Karpol *et al.* discloses a method corresponding to the illustrated apparatus (Fig. 1A) for article inspection which would comprise the steps of emitting an laser beam with a wavelength in the recited range (column 6, lines 17-18) from laser source 4, irradiating a sample 1 with the beam through coherence reducing means 30, detecting an image of the sample 1, and obtaining an image signal of the image of the sample 1 with image detecting means 20. The method of Karpol *et al.* is for detecting pattern defects as is apparent from the discussion at column 1, lines 38-44. Although the reference is silent as to the specific operation of elements 34 and 32, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the processor 32 would use information about the detected image signal from image detecting means 20 in view of the connection therebetween to detect any missing or extra chrome.

With respect to dependent claim 25, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the coherence reducing means 30 used in the method of Karpol *et al.* reduced at least the spatial coherence of the beam from laser source 4 since this is a typical effect of the embodiments disclosed by the reference.

With respect to dependent claim 26, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the coherence reducing means 30 used in the method of Karpol *et al.* reduced at least the temporal coherence of the beam from laser source 4 since this is a typical effect of the embodiments disclosed by the reference.

With respect to independent claim 27, Karpol *et al.* discloses a method corresponding to the illustrated apparatus (Fig. 1A) for article inspection which would comprise the steps of emitting coherent light from a light source 4 on an optical path, reducing the coherence of the emitted coherent light on the optical path (with coherence reducing means 30), irradiating a sample 1 with the coherence reduced light through an objective lens 10, and detecting an image of the sample 1

with storage-type detector **20** (column 6, lines 24-30) through the objective lens **10**. The method of Karpol *et al.* is for detecting pattern defects as is apparent from the discussion at column 1, lines 38-44. Although the reference is silent as to the specific operation of elements **34** and **32**, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the "reference file" stored in element **34** serving as a storage means was an image signal stored beforehand which processor **32** would compare to the image signal from image detecting means **20** as the most straightforward process to detect any extra or missing chrome.

With respect to independent claim 28, Karpol *et al.* discloses a method corresponding to the illustrated apparatus (Fig. **1A**) for article inspection which would comprise the steps of emitting an ultraviolet laser beam from laser source **4**, irradiating a sample **1** of the recited type (column 6, line 12, and elsewhere) with the beam through coherence reducing means **30** and an objective lens **10**, detecting an image of the sample **1** with a solid state imager (column 6, lines 24-30) through the objective lens **10**, and obtaining an image signal of the image of the sample **1** with image detecting means **20**. The method of Karpol *et al.* is for detecting pattern defects as is apparent from the discussion at column 1, lines 38-44. Although the reference is silent as to the specific operation of elements **34** and **32**, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the "reference file" stored in element **34** serving as a storage means was an image signal which processor **32** would compare to the image signal from image detecting means **20** as the most straightforward process to detect any extra or missing chrome. The functional capability of the step of detecting a defect in a particular size range is an inherent feature of the emission, irradiation, and detecting steps and in view of the disclosure of these steps by Karpol *et al.* in a scope identical to the recitations in the claim, it would have been obvious to one of ordinary skill in the art

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at the time the invention was made that a defect in the recited size range was detectable with the method.

6. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Response to Submission(s)

7. The amendment filed July 20, 2000 has been entered.

Allowable Subject Matter

8. Claims 5-9 and 16-23 are allowed.

9. Claims 2, 4, and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: scanning of an ultraviolet laser beam which has had its coherence reduced over a pupil is not suggested; oblique incidence to the coherence reducing means is not suggested; although Karpol *et al.* shows table 2, timing controlling is not suggested; illuminating means for illuminating uniformly is not suggested.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bader (US006256087B1), Broude *et al.* (US005625193A), Tanaka *et al.* (US005331169A), Vaught *et al.* (US005264912A), and Tommasini *et al.* (US005264700A) represent methods and apparatus comprising at least one claim element

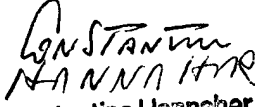
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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Constantine Hannaher whose telephone number is (703) 308-4850. The examiner can normally be reached on Monday-Friday with flexible hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (703) 308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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April 3, 2003


Constantine Hannaher
Primary Examiner

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